

In re Patent Application of:

MELLOT

Serial No. 09/491,953

Filing Date: 01/26/00

REMARKS

Claims 5-20 remain in this application. Original Claims 1-4 have been cancelled. Claims 5, 8, 12, 16 and 17 have been amended.

Applicant thanks the Examiner for the detailed study of the application and prior art.

Applicant submits under a separate cover page to the Official Draftsman a new sheet 1 showing FIG. 1 with the proper label "PRIOR ART". Grammatical and typographical errors have been corrected in some of the amended claims, including allowed claim 16.

The present invention is an improvement over prior art microphones as shown in FIG. 1, which achieves polarization by a positive DC voltage through a pull-up resistor initializing the microphone operating state. As shown in FIG. 1, the pull-up signal resistor 3 is connected to a filter circuit and Vcc. A separate reference voltage Vref is connected into the differential structure amplifier through a first input. The output of the microphone is connected to Vcc and to the second input. This prior art circuit allows the microphone output signal that is formed by a variable current to pass through the pull-up resistor. In that circuit, the variable voltage at the terminals of this resistor is representative of the microphone output signal. This is a standard prior art circuit, but it lacks immunity from the useful microphone output signal-to-noise, affecting positive DC biasing voltage of the microphone. This prior art circuit filters the biasing voltage before applying it to a pull-up resistor, for example, in an R.C. circuit.

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The present claimed invention solves this problem by the signal amplification circuit shown in FIG. 2, where the differential amplifier has its first input receiving a reference voltage and its second input receiving the signal to be amplified as part of the microphone output. The biasing resistor is connected between the first and second inputs. This novel and unobvious improvement includes a signal resistor through which the current passes connected between the first and second inputs and the output of the microphone and the reference voltage. Thus, the variations of the currents correspond to the signal to be amplified. This signal resistor can be a pull-up resistor for initializing an operating state of the microphone (connected to the output). The second input of the differential amplifier connects to the microphone output.

Nowhere does the prior art of FIG. 1 suggest the signal resistor connected between first and second inputs and to an output of a microphone and the reference voltage, such that the variations of the current correspond to the signal to be amplified. The present claimed invention aids in correcting the prior art lack of immunity of the useful microphone output signal-to-noise, which affects the positive DC biasing voltage of the microphone. This is an improvement over filtering the biasing voltage before applying it to a pull-up resistor.

The cited prior art to Hayt, Jr. teaches a parallel circuit that combines parallel resistive elements based upon the Kirchhoff current law equation. Indeed, there is no teaching or suggestion in the FIG. 1 prior art or in Hayt for any impedance matching or any type of circuit as in the

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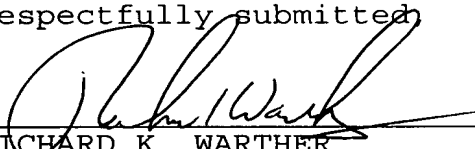
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present claimed invention, in which a signal resistor is parallel to the biasing resistor and connected between first and second inputs, the signal resistor being in parallel to the biasing resistor and connected to the output of the microphone and the reference voltage for the differential amplifier.

Accordingly, Applicant contends that the present case is in condition for allowance and respectfully requests that the Examiner issue a Notice of Allowance and Issue Fee Due.

If the Examiner has any questions or suggestions for placing this case in condition for allowance, the undersigned attorney would appreciate a telephone call.

Respectfully submitted



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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: **MAIL STOP NON-FEE AMENDMENT, COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450**, on this 10th day of March, 2004.